AMENDMENTS TO THE CLAIMS

1. (Currently amended) An antenna system for measuring azimuth and elevation angles of an active, signal sending radiosonde (31), which antenna system comprises

- a first passive antenna group (13) comprising at least two antenna arrays (11a, 11b), the direction pattern of which is wide at least in elevation plane for measuring azimuth angle of the radiosonde (31) based on the phase differences between the antenna arrays (11a, 11b) and the rotational position of the antenna field (1),
- a second passive antenna group (12) comprising at least two antenna arrays (10a, 10b), the direction pattern of which is wide at least in elevation plane for measuring the elevation angle of the radiosonde (31) based on the phase differences between the antenna arrays (10a, 10b) ~~and the rotational position of the antenna field (1)~~, and
- at least one third antenna element (8) having high gain for receiving the telemetry signal, the direction pattern of which element (8) is narrow in azimuth plane and wide in elevation plane,

characterized in that

- first (13) and second (12) antenna groups form a solid antenna field (1), and
- antenna field (1) is fixedly tilted in a predetermined elevation position.

2. (Original) The antenna system of claim 1, characterized in that the third antenna (8) belongs to the antenna field (1).

3. (Previously presented) The antenna system of claim 1, characterized in that the antenna field is essentially planar.

4. (Previously presented) The antenna system of claim 1, characterized in that the gain pattern minimum (35) (null) of each antenna array (10a, 10b, 11a, 11b) is aligned to the direction of the ground reflection (30).

5. (Previously presented) The antenna system according to claim 1, characterized in that the antenna system comprises means for rotating the antenna field (1) around vertical axis (7) approximately to the direction of the radiosonde (31) while the elevation angle remains essentially constant.

6. (Previously presented) The antenna system according to claim 1, characterized in that radiosonde (31) telemetry reception is independent of azimuth and elevation measurements.

7. (Previously presented) The antenna system according to claim 1, characterized in that the antenna field (14) is fixed in elevation and azimuth direction, and that the system comprises at least three antenna fields (14) pointing to different azimuth directions.

8. (Original) The antenna system of claim 7, characterized in that the gain pattern minimum (null) of each antenna array (17a, 17b, 18a, 18b) is aligned to the direction of the ground reflection.

9. (Previously presented) The antenna system of claim 7, characterized in that radiosonde telemetry reception (15) is independent of azimuth and elevation measurements.

10. (Previously presented) The antenna system according to claim 1, characterized in that the antenna field (1) is fixedly tilted backwards.

11. (Previously presented) The antenna system according to claim 1, characterized in that the antenna field (1) forms an inverted letter T.

12. (Original) A method for measuring azimuth and elevation angles of an active, signal sending radiosonde (31), in which method

- the azimuth angle of the radiosonde (31) is measured based on the phase differences of the received radiosonde signals between the antenna arrays (11a, 11b) and the rotational position of the antenna field (1) with a first passive antenna group (13) comprising at least two antenna arrays (11a, 11b), the direction pattern of which is wide at least in elevation plane,
- the elevation angle of the radiosonde (31) is measured based on the phase differences of the received radiosonde signals between the antenna arrays (10a, 10b) with a second passive antenna group (12) comprising at least two antenna arrays (10a, 10b), the direction pattern of which is wide at least in elevation plane, and
- the telemetry signal is received with at least one third antenna element (8) having high gain, the direction pattern of which element (8) is narrow in azimuth plane and wide in elevation plane,

characterized in that

- first (13) and second (12) antenna groups form a solid antenna field (1), and
- antenna field (1) is fixedly tilted in a predetermined elevation position.

13. (Original) The method of claim 12, characterized in that the third antenna (8) belongs to the antenna field (1).

14. (Previously presented) The method according to claim 12, characterized in that the gain pattern minimum (null) of each antenna array (17a, 17b, 18a, 18b) is aligned to the direction of the ground reflection.

15. (Previously presented) The method according to claim 12, characterized in that radiosonde telemetry reception is independent of azimuth and elevation measurements.

16. (Previously presented) The method according to claim 12, characterized in that the antenna system is rotated around vertical axis (7) approximately to the direction of the radiosonde (31) while the elevation angle remains essentially constant.

17. (Previously presented) The method according to claim 12, characterized in that the antenna field (1) is fixedly tilted backwards.

18. (Previously presented) The method according to claim 12, characterized in that the antenna field (14) is fixed in elevation and azimuth direction, and that the system comprises at least three antenna fields (14) pointing to different azimuth directions.

19. (Original) The method according to claim 18, characterized in that the gain pattern minimum (null) of each antenna array (17a, 17b, 18a, 18b) is aligned to the direction of the ground reflection.

20. (Previously presented) The method according to claim 18, characterized in that radiosonde telemetry reception (15) is independent of azimuth and elevation measurements.